SONY

POWER SUPPLY UNIT

# AC-P700A

MAINTENANCE MANUAL
1st Edition (Revised 1)
Serial No. 11001 and Higher (J)
Serial No. 31001 and Higher (UC)
Serial No. 51001 and Higher (CE)

## ⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理など行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

## ⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

## ⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

## ⚠AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

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# Manual Structure

## Purpose of this manual

This manual is the Maintenance Manual of the Power Supply Unit AC-P700A. This manual is intended for use by trained system and service engineers, and describes the information when installing and detailed service information with the intention of servicing based on the component parts ( schematic diagrams, board layouts, detailed spare parts list and so on).

## Contents

This manual is organized by following sections.

**Section 1 Installation**
This section describes the operation environment, dimensions, power supply and rack mounting.

**Section 2 Service Overview**
This section describes the board location and the replacement of fuse.

**Section 3 Electrical Alignment**
This section describes adjustments required when PS-471 board is replaced.

**Section 4 Spare Parts**
This section describes spare parts. (exploded view, mechanical parts list, electrical parts list and supplied accessories list)

**Section 5 Board Layouts**
This section describes board layouts. (the printed circuit patterns and printed symbols)

**Section 6 Schematic Diagrams**
This section describes the schematic diagrams of circuit board.

## Related manual

The following manual is prepared for this unit.

- **Operation Manual (Supplied with the AC-P700A)**
  This manual is necessary for application and operation of the AC-P700A.

# Section 1
# Installation

## 1-1. Operation Environment

- Operation temperature:
  −5 ˚C to +35 ˚C (+41 ˚F to +95 ˚F)
- Storage temperature:
  −20 ˚C to +60 ˚C (−4 ˚F to +140 ˚F)
- Mass (Weight): 21.0 kg (46.2 lbs)
- Do not install in the places:
  - Areas exposed to direct sunlight or any other strong lights
  - Dusty areas
  - Areas with strong electric or magnetic fields
  - Areas near heat sources
  - Areas subject to vibration
  - Areas with much electrical noise
  - Areas with much static noise

## 1-2. Power Supply

### 1-2-1. AC Power Supply Capacity

Power supply voltages ; J : 100 Vac
UC : 120 Vac
CE : 220/230/240 Vac
(Voltage Select-Type)

Power supply frequency : 50/60 Hz (For J, CE)
50 Hz (For UC)

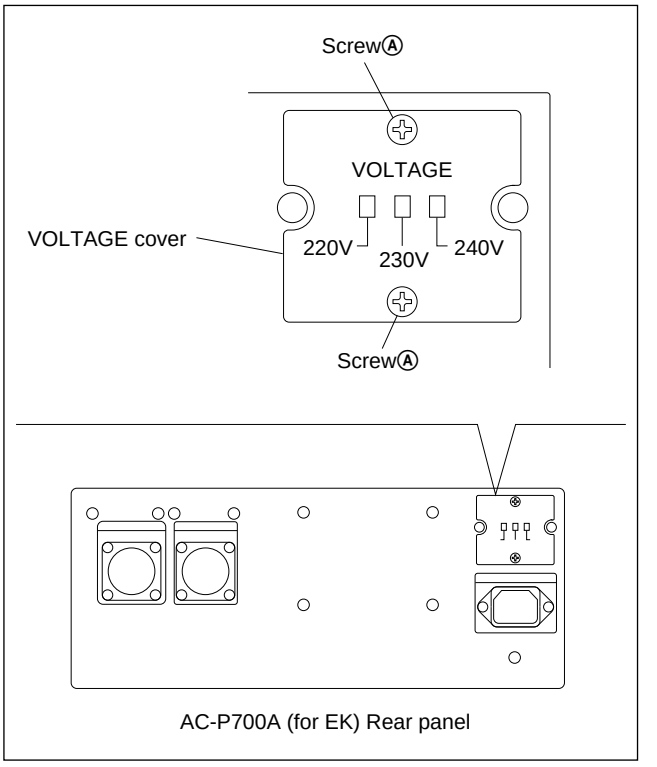
Power/Current consumption (For MXP-700 Series)
(MXP-700 series with meter units and modules installed)

| Model (MXP-700 series) | For J | For UC | For CE |
|---|---|---|---|
| MXP-716 ⁎1 | 350 W | 350 W | 350 W/1.6 A |
| MXP-728 ⁎1 | 500 W | 500 W | 500 W/2.3 A |
| MXP-744 ⁎2 | 800 W | 800 W | 800 W/3.6 A |

⁎1: Using one AC-P700A unit
⁎2: Using two AC-P700A units

### 1-2-2. Voltage Selector Setting (for CE)

The AC-P700A (destination CE) is shipped from the factory with power line set to 230 Vac. Befor using the AC-P700A (destination CE), check that the VOLTAGE SELECTOR is correctly set to your local power supply voltage (220, 230 or 240 Vac). If it is not, changed the setting of the VOLTAGE SELECTOR accordingly. Remove the VOLTAGE cover (two screws Ⓐ) of the rear panel to access the VOLTAGE SELECTOR switch.



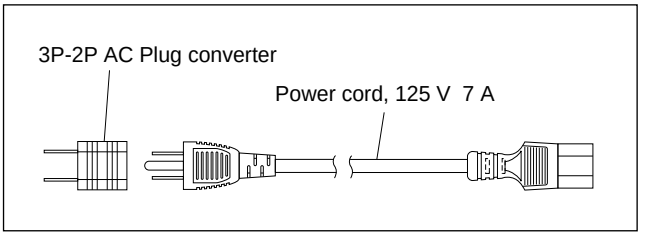
AC-P700A (for EK) Rear panel

## 1-2-3. AC Power Cable

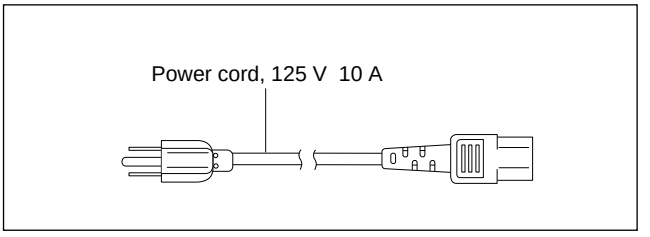
(1) Length about 2.4m (For J,UC)
about 2.5m (For CE)

(2) Configuration

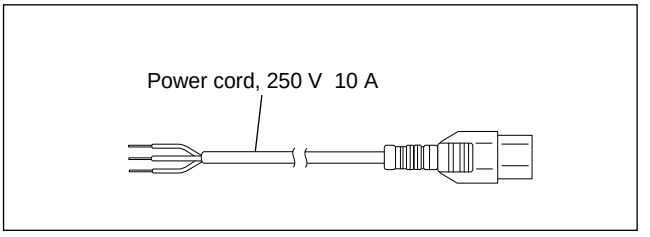
(For J)




(for UC)




(for CE)




## 1-2-4. Power Supply Connection

### 1. Connection to the MXP-716/728/744

The number of AC-P700A vary with connected model.

Number of AC-P700A

| Model | Number of AC-P700A |
|---|---|
| MXP-716/728 | 1 Req's |
| MXP-744 | 2 Req's |

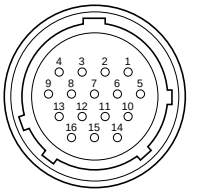
When connecting AC-P700A to the MXP-716/728/744, use the DC cable (length 10 m) supplied to the respective console frame and connect both following connectors.

| MXP-716/728/744 | | AC-P700A |
|---|---|---|
| DC IN connector (Rear panel) | ⇔ | DC OUT connector (Rear panel) |

This input and output signals of DC OUT connector as shown below.

DC OUT: Round type, 16P, FEMALE (SOCKET)

-OUTSIDE VIEW-




| PIN No. | Signal |
|---|---|
| 1 | +15VSENSE |
| 2,3 | AGND |
| 4 | –15VSENSE |
| 5,6 | +15V/7.8A |
| 7 | ALARM |
| 8,9 | –15V/7.2A |
| 10,11 | +5V/1A |
| 12 | DGND |
| 13 | MUTE |
| 14 | +48V/0.25A |
| 15 | +12V/0.05A |
| 16 | CGND |

## 2. Power supply connection for redundancy

The AC-P700A (for redundancy) can be connected the AC-P700A in the console as a back up using the optional DC cable MXBK-CA70 as follows.

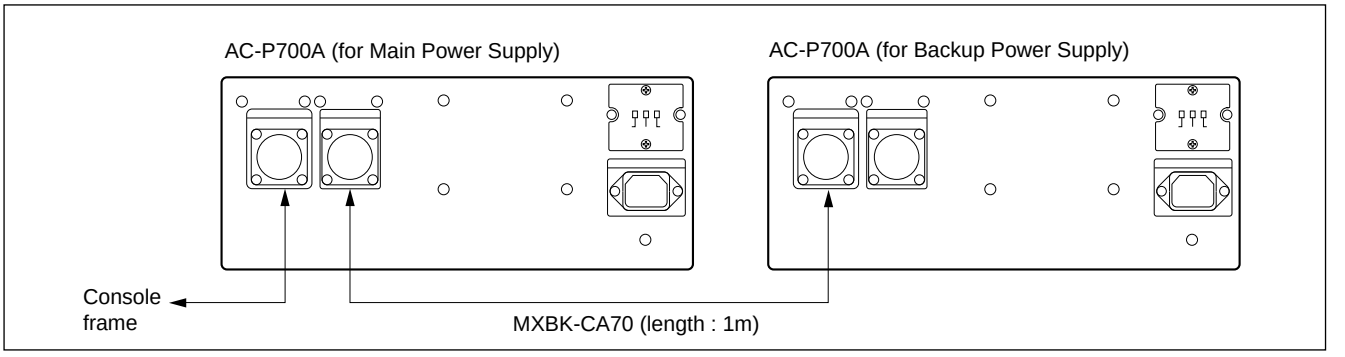
| Console Frame | Number of AC-P700A (for Redundancy), MXBK-CA70 |
|---|---|
| MXP-716/728 | AC-P700A (for Redundancy) 1 req'd, MXBK-CA70 1 req'd |
| MXP-744 | AC-P700A (for Redundancy) 2 req'd, MXBK-CA70 2 req'd |

### Connection

Connect the MXBK-CA70 between the AC-P700A (for main) and AC-P700A (for redundancy) as shown below.

**Note** : Turn off the power of AC-P700A before connecting.

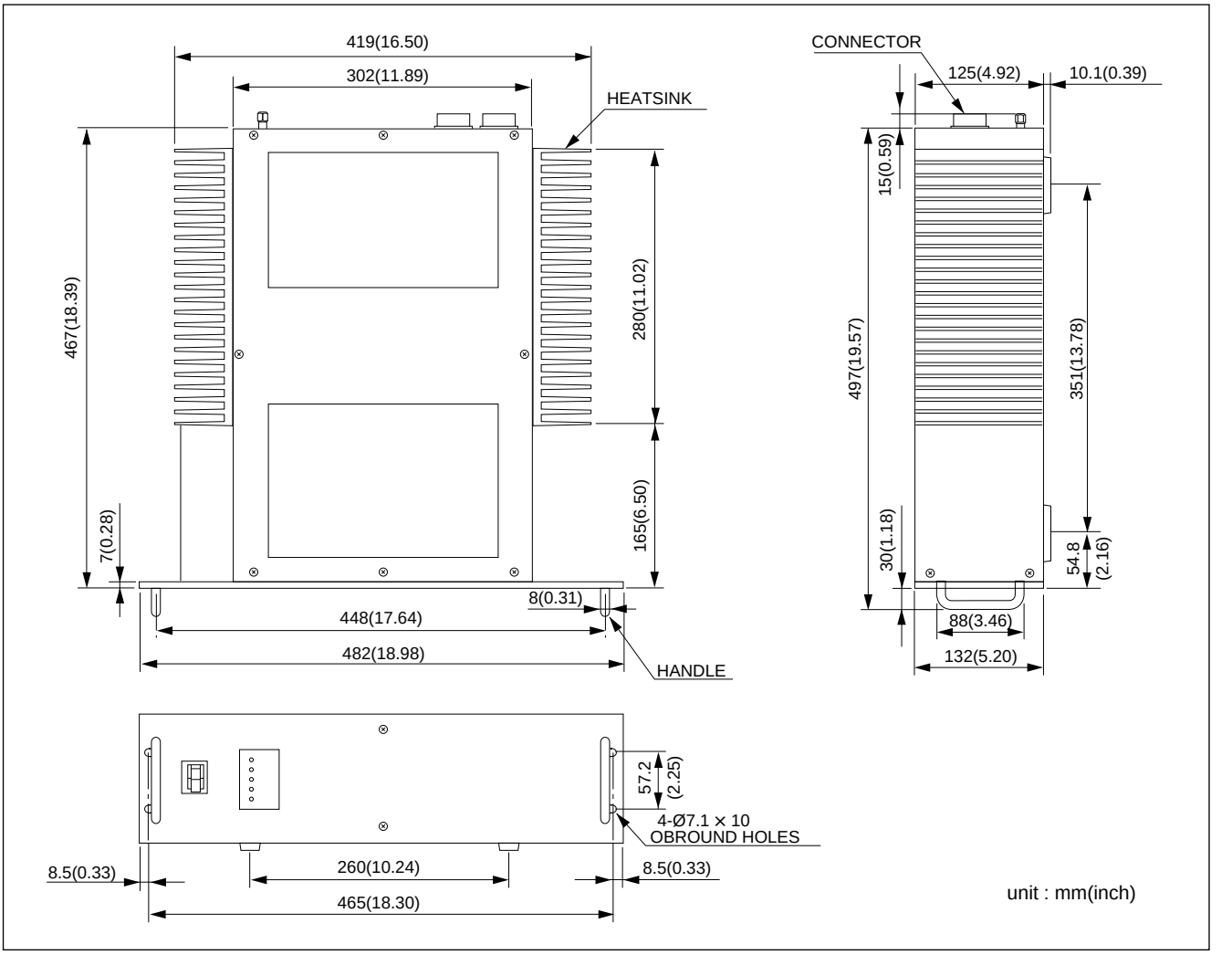
| AC-P700A(for main) | | AC-P700A(for Redundancy) |
|---|---|---|
| BACK UP connector (Use the connector to unconnected console frame) | ⇔ | BACK UP connnector |




**Note** : After connecting the additional AC-P700A for backup, switch settings and adjustments are not required. (The VOLTAGE SELECTOR must be set for CE model.)

## 1-3. Installation Space

The external dimensions are shown in the figure below.

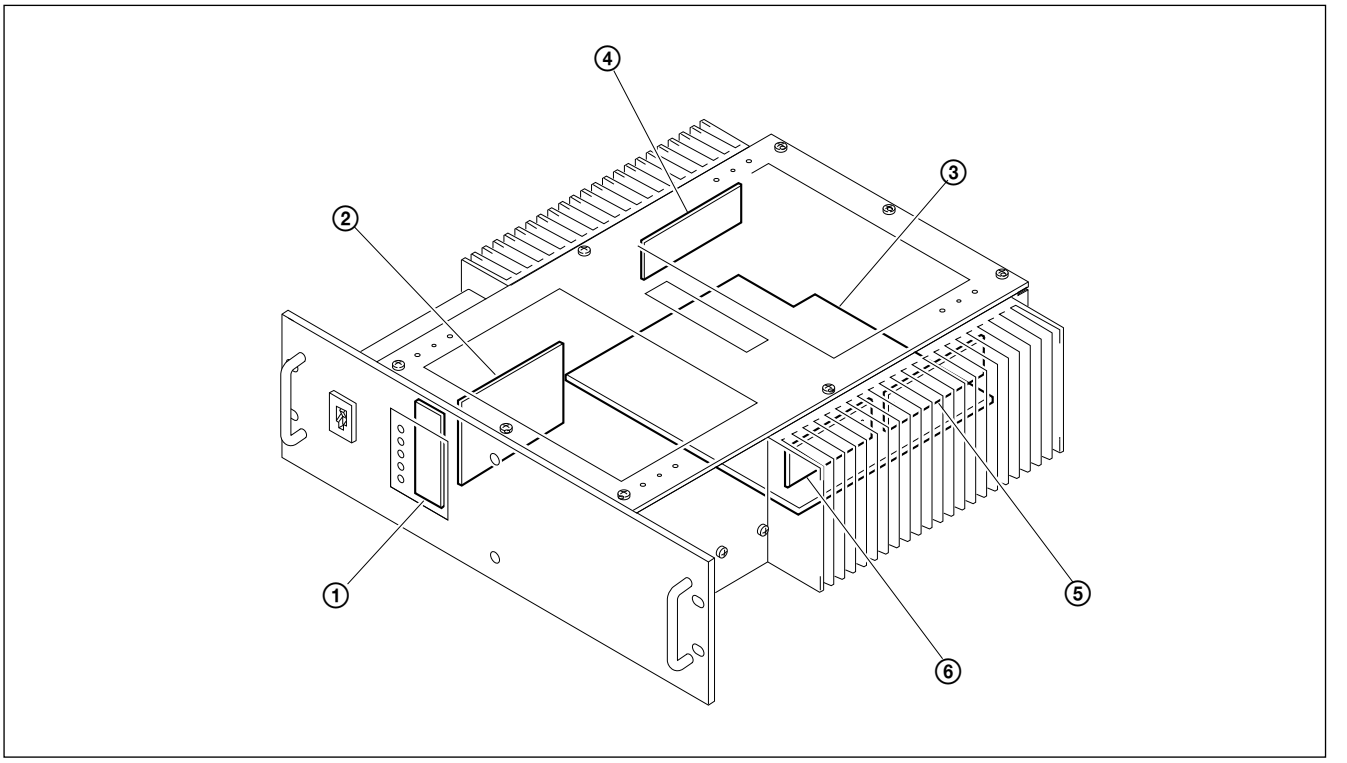



## 1-4. Note on Rack Mounting

The AC-P700A is designed to mount into the standard 19-inch rack. The height of the unit (panel) is 132 mm (3U) with a depth of 482 mm.
The AC-P700A must be 150 mm or more away from the floor to allow the cables to be connected.
When mounting the power supply unit into the 19-inch rack, leave a blank space of more than 1U (44 mm) at the top and bottom for cooling.

# Section 2
# Service Overview

## 2-1. Board Location




① LED-297 : LED Board
② PS-461 : A.C. Board
③ PS-471 : Main Power Supply Board
④ PS-472A : Pass Transistor Board
⑤ PS-472B : Pass Transistor Board
⑥ PS-473 : Regulator (5 V) Board

## 2-2. Fuse Replacement

The fuse are mounted the following boards of AC-P700A.

**Note**

Be sure to turn off the power switch and disconnect the power cable before replacing these fuses.

### 1. PS-461 board

Replace the fuse with following as shown in the parts list of “Sec.4 Spare Parts”.

PS-461 board (Ref.No. F1) : Fuse 10 A, 125 V (for J, UC)
Fuse 5 A, 250 V (for CE)

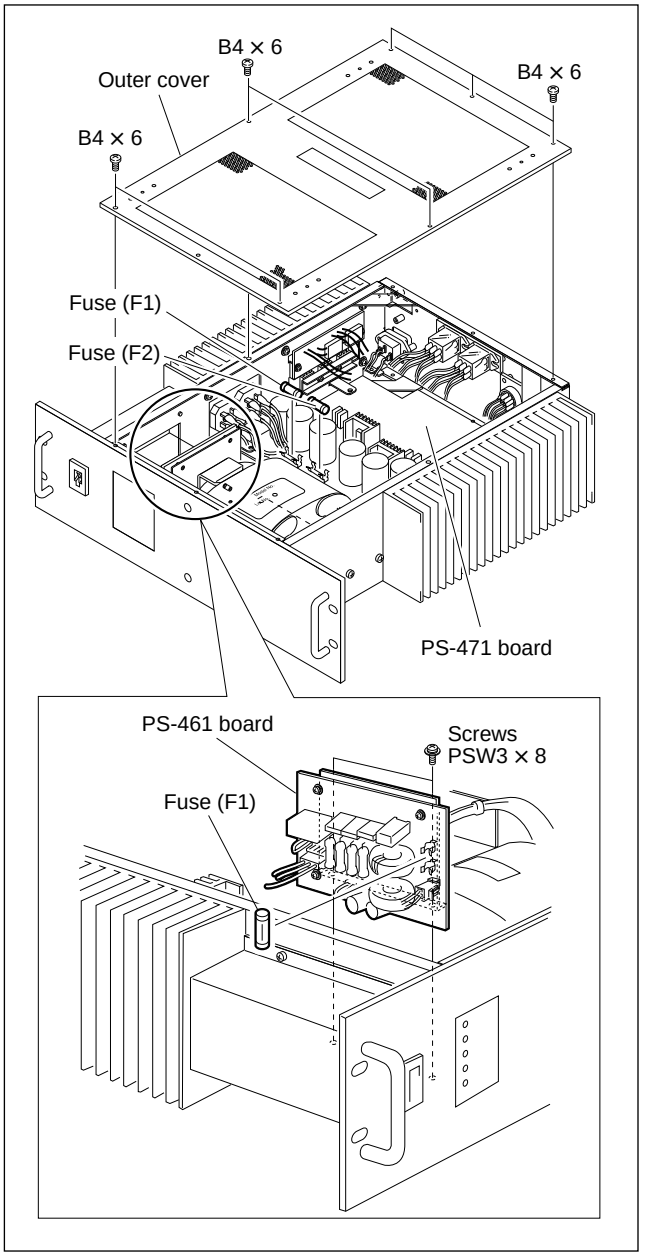
**Procedure**

(1) Remove the eight screws (+B4 × 6) and remove the outer cover from the AC-P700A.
(2) Remove the two screws (+PSW3 × 8) and lift up the PS-461 board with board bracket in the arrow direction.
(3) Remove the fuse from the PS-461 board and replace it with a new one.
(4) After replacement is completed, install the fuse cover and outer cover in the reverse procedure of steps (1) and (2).

### 2. PS-471 board

Replace the fuse with following as shown in the parts list of “Sec.4 Spare Parts”.

PS-471 board (Ref.No. F1) : Fuse 3.15 A, 250 V
(Ref.No. F2) : Fuse 5 A, 250 V



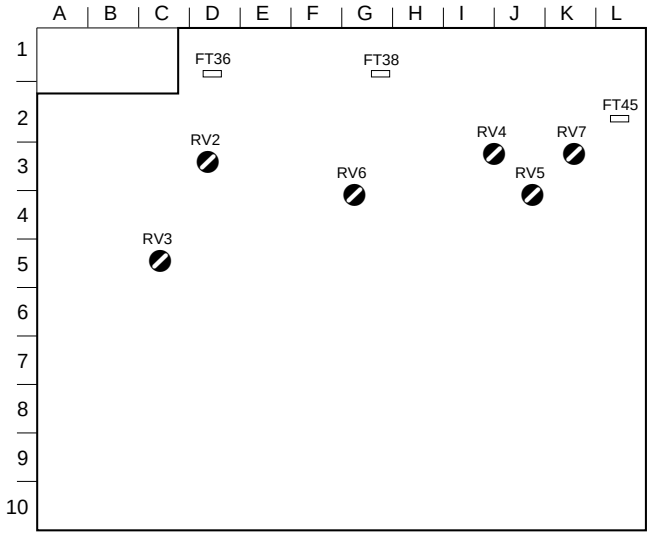
# Section 3
# Electrical Alignment

This section describes the electrical adjustment for AC-P700A (PS-471 board).

### Equipment required

DC volt meter (Digital multi meter)

### Adjustment Location




PS-471 board
(A side)

**Note**

Perform adjustment without any load connected.
(No load is connected to the DC OUT connectors.)

### 1. When AC-P700A is not used as a backup power supply (When the AC-P700A is used for main power supply only)

### Procedure

(1) Set the following RVs of PS-471 board as shown below.
PS-471 board
RV2 (D3) : Fulley clockwise
RV3 (C5) : Fulley counterclockwise
RV4 (J3) : Fulley counterclockwise
RV5 (J4) : Fulley clockwise
RV6 (G4) : Fulley counterclockwise
RV7 (K3) : Fulley counterclockwise

**Note** The relays (RY1, RY2) should be closed at this point.

(2) Adjust ⊘RV5 (J4) so that DC voltage between FT38(G1) terminal and GND obtains +17.5 V ±0.1 V.
(3) Turn ⊘RV4 (J3) slowly clockwise until relay (RY1) opens.
(4) Adjust ⊘RV5 (J4) so that DC voltage between FT38 (G1) terminal and GND obtains +16.4 V ±0.1 V.
The relay (RY1) should be closed at this point.
(5) Adjust ⊘RV7 (K3) so that DC voltage between FT45 (L2) terminal and GND obtains −17.5 V ±0.1 V.
(6) Adjust ⊘RV6 (G4)slowly clockwise until relay (RY1) opens.
(7) Adjust ⊘RV7 (K3) so that DC voltage between FT45 (L2) terminal and GND obtains −16.4 V ±0.1 V.
The relay (RY1) should be closed at this point.
(8) Adjust ⊘RV3 (C5) so that DC voltage between FT36 (D1) terminal and GND obtains +50.0 V ±0.1 V.
(9) Turn ⊘RV2 (D3) slowly counterclockwise until relay (RY2) opens.
(10) Adjust ⊘RV3 (C5) so that DC voltage between FT36 (D1) terminal and GND obtains +47.5 V ±0.1 V.
The relay (RY2) should be closed at this point.
(11) Turn OFF the power of the AC-P700A, and then connect the AC-P700A to the rated load.
Either one of DC OUT connectors on the AC-P700A rear panel may be used.
(12) Turn ON the power of the AC-P700A.
Check the following output voltages after one hour warm-up period.
These voltages may be measured at the unused DC OUT connector.

| DC OUT connector | Output voltage(checking) |
|---|---|
| Between pins 1 and 2 (GND) | +16.00 ±0.25 V |
| Between pins 4 and 2 (GND) | −16.00 ±0.25 V |
| Between pins 14 and 2 (GND) | +48.0 ±1.5 V |

After the checking, readjust if necessary.

## 2. When AC-P700A is used as the buckup power supply

When the two units of AC-P700A are used as the main power supply and the buckup power supply, adjust them as follows:

### Procedure

Step 1:

Adjust AC-P700A which is used as the main power supply. Perform the procedures from (1) to (10) of section "1. When AC-P700A is not used as a backup power supply".

Step 2:

Adjust the AC-P700A for backup power supply.

(1) Set the following RVs of PS-471 board as shown below.
   PS-471 board
   RV2 (D3) : Fulley clockwise
   RV3 (C5) : Fulley counterclockwise
   RV4 (J3) : Fulley counterclockwise
   RV5 (J4) : Fulley clockwise
   RV6 (G4) : Fulley counterclockwise
   RV7 (K3) : Fulley counterclockwise

   **Note** The relays (RY1, RY2) should be closed at this point.

(2) Adjust ⊘RV5 (J4) so that DC voltage between FT38 (G1) terminal and GND obtains +16.5 V ±0.1 V.

(3) Turn ⊘RV4 (J3) slowly clockwise until relay (RY1) opens.

(4) Adjust ⊘RV5 (J4) so that DC voltage between FT38 (G1) terminal and GND obtains +15.4 V ±0.1 V.
The relay (RY1) should be closed at this point.

(5) Adjust ⊘RV7 (K3) so that DC voltage between FT45 (L2) terminal and GND obtains −16.5 V ±0.1 V.

(6) Adjust ⊘RV6 (G4) slowly clockwise until relay (RY1) opens.

(7) Adjust ⊘RV7 (K3) so that DC voltage between FT45(L2) terminal and GND obtains −16.4 V ±0.1 V.
The relay (RY1) should be closed at this point.

(8) Adjust ⊘RV3 (C5) so that DC voltage between FT36 (D1) terminal and GND obtains +50.0 V ±0.1 V.

(9) Turn ⊘RV2 (D3) slowly counterclockwise until relay (RY2) opens.

(10) Adjust ⊘RV3 (C5) so that DC voltage between FT36 (D1) terminal and GND obtains +47.5 V ±0.1 V.
The relay (RY2) should be closed at this point.

Step 3:

Turn OFF the power of the AC-P700A units for main and backup power supply, and then connect the rated load to either DC OUT connector on the rear panel of the AC-P700A for main power suppply.
Connect the other DC OUT connector on the AC-P700A for main power supply to either DC OUT connector on the rear panel of the AC-P700A for backup power supply with DC cable MXBK-CA70 (optional).

Step 4:

Turn ON the power of the AC-P700A units for main and backup power supply.
Check the output voltage of the AC-P700A for main power supply after a one hour warmup period.
These voltage may be measured at the unused DC OUT connector on the AC-P700A for backup power supply.

| DC OUT connector | Output voltage (checking) |
|---|---|
| Between pins 1 and 2 (GND) | +16.00 ±0.25 V |
| Between pins 4 and 2 (GND) | −16.00 ±0.25 V |
| Between pins 14 and 2 (GND) | +48.0 ±1.5 V |

After the checking, readjust if necessary.

Step 5:

Turn OFF the power of the AC-P700A for main power supply.
Check the output voltages of the AC-P700A for backup power supply.
These voltages may be measured at the unused DC OUT connector on the AC-P700A backup power suppply.

| DC OUT connector | Output voltage (checking) |
|---|---|
| Between pins 1 and 2 (GND) | +15.00 ±0.25 V |
| Between pins 4 and 2 (GND) | −15.00 ±0.25 V |
| Between pins 14 and 2 (GND) | +48.0 ±1.5 V |

After the checking, readjust if necessary.

# Section 4
# Spare Parts

## 4-1. Notes on Repair Parts

1. Safety Related Components Warning

   Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

   Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.

   Parts list has the present standardized repair parts.

3. Stock of Parts

   Parts marked with “o” at SP(Supply Code) column of the spare parts list may be not stocked. Therefore, the delivery date will be delayed.

4. Units Representation

   The following represented units are changed or omitted in writing.

| Units | | Representation |
|---|---|---|
| Capacitance | μF | uF |
| Inductance | μH | uH |
| Resistance | Ω | Abbreviation |
| Temperature | ˚C | XXX-DEG-C |

5. Destination Representation

   The part indicated “For J/UC/CE” in the spare parts list is used in the unit written below.

   For J : The part is used in a unit for Japan.

   For UC : The part is used in a unit for U.S.A. and Canada.

   For CE : The part is used in a unit for regions except the above countries.

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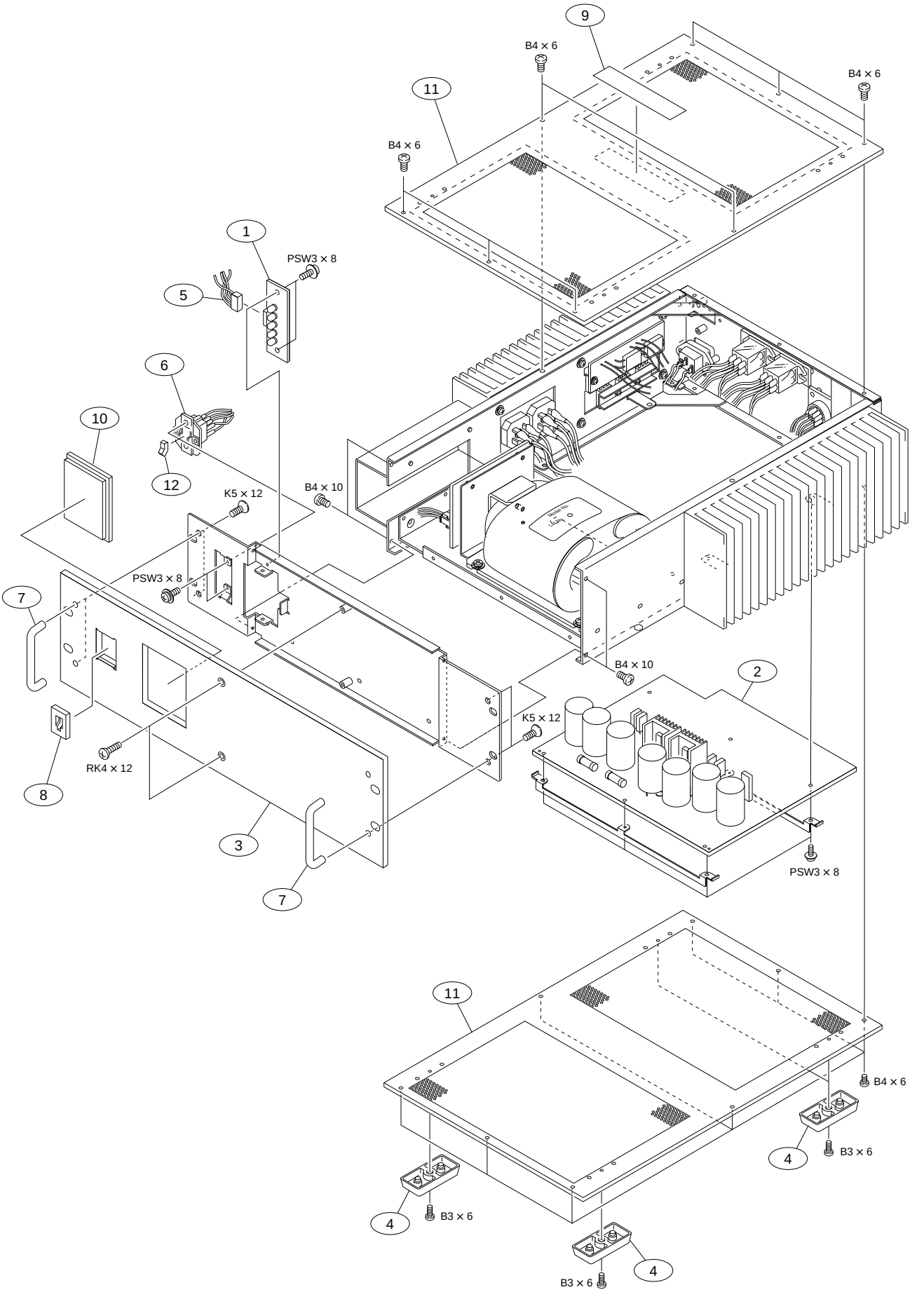
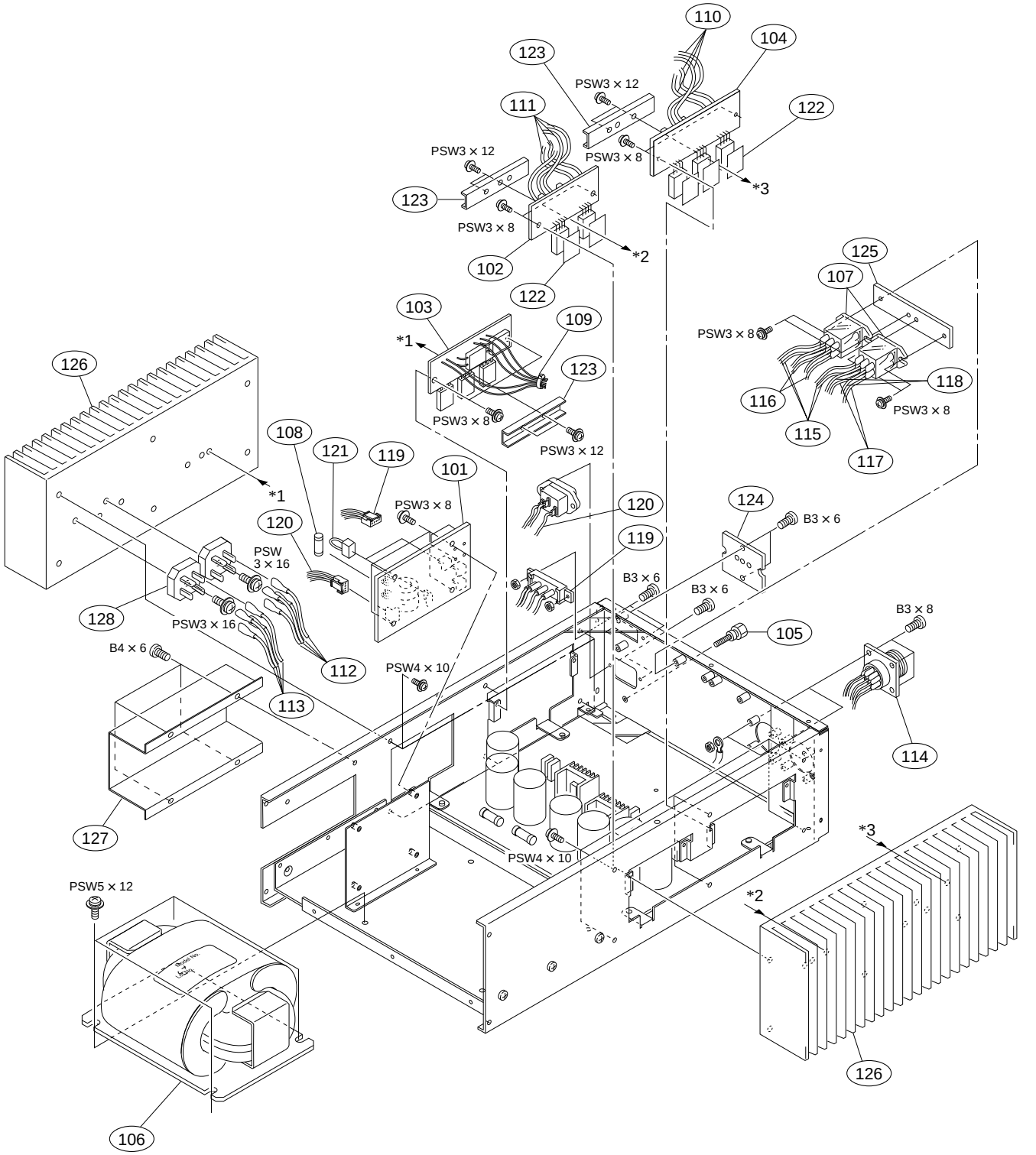
## 4-2. Exploded Views and Parts

| No. | Part No. | SP | Description |
|---|---|---|---|
| 1 | A-8311-862-A | o | MOUNTED CIRCUIT BOARD, LED-297 |
| 2 | A-8311-868-A | o | MOUNTED CIRCUIT BOARD, PS-471 |
| 3 | X-3167-896-2 | o | PANEL ASSY, FRONT |
| 4 | X-4852-903-0 | s | LEG ASSY |
| 5 | 1-956-796-11 | o | HARNESS (LED) |
| 6 | ⚠ 1-956-805-11 | o | HARNESS (POWER SWITCH) (For CE) |
| | ⚠ 1-956-806-11 | o | HARNESS (POWER SWITCH) (For J,UC) |
| 7 | 2-378-801-01 | s | HANDLE |
| 8 | 3-681-054-01 | o | POWER SW GUARD |
| 9 | 3-186-056-01 | o | LABEL |
| 10 | 3-186-057-01 | o | WINDOW |
| 11 | 3-191-475-01 | o | COVER, OUTER |
| 12 | 3-688-814-01 | s | CAP, SWITCH |


9
B4 × 6
B4 × 6
11
B4 × 6
1
PSW3 × 8
5
6
10
12
K5 × 12
B4 × 10
PSW3 × 8
7
B4 × 10
2
K5 × 12
RK4 × 12
8
3
7
PSW3 × 8
11
B4 × 6
4
B3 × 6
4
B3 × 6
4
B3 × 6

| No. | Part No. | SP | Description |
|---|---|---|---|
| 101 | A-8311-863-A | o | MOUNTED CIRCUIT BOARD, PS-461 |
| 102 | A-8311-865-A | o | MOUNTED CIRCUIT BOARD, PS-473<br>(Up to Serial No. UC:31024, CE:51036) |
| | A-8311-865-B | o | MOUNTED CIRCUIT BOARD, PS-473<br>(Serial No. J:11001 and Higher,<br>UC:31025 and Higher,<br>CE:51037 and Higher) |
| 103 | A-8311-866-A | o | MOUNTED CIRCUIT BOARD, PS-472A |
| 104 | A-8311-867-A | o | MOUNTED CIRCUIT BOARD, PS-472B |
| 105 | X-4801-204-1 | o | TERMINAL ASSY |
| 106 ⚠ | 1-429-846-12 | s | TRANSFORMER, POWER (For J,UC) |
| ⚠ | 1-429-847-12 | s | TRANSFORMER, POWER (For CE) |
| 107 | 1-515-825-11 | s | RELAY, POWER |
| 108 ⚠ | 1-576-048-11 | s | FUSE 10A 125V (For J,UC) |
| ⚠ | 1-576-232-11 | s | FUSE (H.B.C) 5A 250V (For CE) |
| 109 | 1-956-793-11 | o | HARNESS (PS-472A) |
| 110 | 1-956-794-11 | o | HARNESS (PS-472B) |
| 111 | 1-956-795-11 | o | HARNESS (PS-473) |
| 112 | 1-956-797-11 | o | HARNESS (D2) |
| 113 | 1-956-798-11 | o | HARNESS (D1) |
| 114 | 1-956-799-11 | o | HARNESS (DC1) |
| 115 | 1-956-800-11 | o | HARNESS (RELAY) |
| 116 | 1-956-801-11 | o | HARNESS (RY-48V/5V) |
| 117 | 1-956-802-11 | o | HARNESS (RY-16VNEG) |
| 118 | 1-956-803-11 | o | HARNESS (RY-16VPOS) |
| 119 ⚠ | 1-956-804-11 | o | HARNESS (VOLTAGE SELECTOR) (For CE) |
| 120 ⚠ | 1-956-805-11 | o | HARNESS (POWER SWITCH) (For CE) |
| ⚠ | 1-956-806-11 | o | HARNESS (POWER SWITCH) (For J,UC) |
| 121 | 1-956-807-11 | o | HARNESS (SELECTOR) |
| 122 | 2-621-962-01 | o | RUBBER (1), SILICON, RADIATION |
| 123 | 3-186-053-01 | o | BRACKET |
| 124 | 3-186-054-11 | o | COVER |
| 125 | 3-186-055-01 | o | RELAY SUPPORT |
| 126 | 3-186-061-01 | o | HEAT SINK |
| 127 | 3-191-471-01 | o | COVER, SWITCH |
| 128 | 8-719-500-07 | s | DIODE S25VB60 |


110
104
123
PSW3 × 12
111
122
PSW3 × 12
PSW3 × 8
*3
123
PSW3 × 8
*2
102
122
125
107
103
*1
109
PSW3 × 8
123
118
116
PSW3 × 8
PSW3 × 12
115
117
126
108
121
119
101
*1
PSW3 × 8
120
120
124
B3 × 6
PSW
3 × 16
119
B3 × 6
B3 × 6
128
105
B3 × 8
PSW3 × 16
B4 × 6
112
PSW4 × 10
113
114
127
*3
PSW4 × 10
PSW5 × 12
*2
126
106

## 4-3. Electrical Parts List

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LED-297 BOARD
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Ref. No.
or Q'ty  Part No.    SP Description

1pc      A-8311-862-A o MOUNTED CIRCUIT BOARD, LED-297
(This assembly includes the following parts.)

5pcs     3-918-004-12 o SPACER (LED)

CN1      1-506-489-11 o CONNECTOR 10P, MALE

D1       8-719-061-25 s DIODE PG5335S
D2       8-719-061-25 s DIODE PG5335S
D3       8-719-061-25 s DIODE PG5335S
D4       8-719-061-25 s DIODE PG5335S
D5       8-719-061-26 s DIODE PR5335S
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PS-461 BOARD
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Ref. No.
or Q'ty  Part No.    SP Description

1pc      A-8311-863-A o MOUNTED CIRCUIT BOARD, PS-461
(This assembly includes the following parts.)

2pcs     1-533-183-11 s HOLDER, FUSE

C1       1-128-566-11 s ELECT 470uF 20% 100V
C2       1-128-566-11 s ELECT 470uF 20% 100V

CN1      1-691-960-11 s CONNECTOR 3P, MALE
CN2      1-764-101-11 s CONNECTOR 2P, MALE
CN3      1-766-176-11 o CONNECTOR 6P, MALE
CN4      1-764-101-11 s CONNECTOR 2P, MALE
CN5      1-764-101-11 s CONNECTOR 2P, MALE

CN6      1-779-659-11 o CONNECTOR 5P, MALE

D1       8-719-061-27 s DIODE 10E8
D2       8-719-061-27 s DIODE 10E8

L1     ⚠ 1-415-922-11 s COIL, CHOKE
L2     ⚠ 1-415-922-11 s COIL, CHOKE

R1     ⚠ 1-217-780-11 s RES, FUSIBLE 1 5% 5W
R2       1-217-570-00 s METAL 2.2 10% 5W
R3       1-217-570-00 s METAL 2.2 10% 5W
R4       1-217-570-00 s METAL 2.2 10% 5W
R5       1-215-942-11 s METAL 1K 5% 5W

R6       1-215-942-11 s METAL 1K 5% 5W
R7       1-215-943-11 s METAL 1.5K 5% 5W
R8       1-215-944-11 s METAL 2.2K 5% 5W

RY1    ⚠ 1-755-179-11 s RELAY
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PS-471 BOARD
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Ref. No.
or Q'ty  Part No.    SP Description

1pc      A-8311-868-A o MOUNTED CIRCUIT BOARD, PS-471
(This assembly includes the following parts.)

4pcs     1-533-183-11 s HOLDER, FUSE
1pc      3-188-106-01 o HEAT SINK, H
1pc      4-363-147-00 o HEAT SINK, H.PIN
2pcs     4-854-790-11 o HEAT SINK
4pcs     7-682-646-09 s SCREW +PS 3X5

BB1      1-560-242-71 o BUS BAR 6P
BB2      1-560-242-31 o BUS BAR 5P
BB3      1-560-242-71 o BUS BAR 6P
BB4      1-560-242-71 o BUS BAR 6P
BB5      1-560-242-31 o BUS BAR 5P

C2       1-117-437-11 s ELECT 47000uF 16V
C3       1-117-437-11 s ELECT 47000uF 16V
         (Up to Serial No. UC:31024, CE:51036)

C4       1-137-133-11 s FILM 0.15uF 5% 63V
C5       1-137-133-11 s FILM 0.15uF 5% 63V
C6       1-137-133-11 s FILM 0.15uF 5% 63V
C7       1-137-133-11 s FILM 0.15uF 5% 63V
C8       1-126-951-11 s ELECT 470uF 20% 35V

C9       1-128-553-11 s ELECT 220uF 20% 63V
C10      1-126-967-11 s ELECT 47uF 20% 50V
C11      1-106-367-00 s MYLAR 0.01uF 5% 200V
C12      1-117-436-11 s ELECT 4700uF 100V
C13      1-130-779-11 s FILM 0.15uF 5% 100V

C14      1-130-779-11 s FILM 0.15uF 5% 100V
C15      1-126-967-11 s ELECT 47uF 20% 50V
C16      1-126-951-11 s ELECT 470uF 20% 35V
C17      1-126-967-11 s ELECT 47uF 20% 50V
C18      1-102-978-00 s CERAMIC 220PF 5% 50V

C19      1-117-438-11 s ELECT 27000uF 35V
C20      1-117-438-11 s ELECT 27000uF 35V
C21      1-126-951-11 s ELECT 470uF 20% 35V
C22      1-126-967-11 s ELECT 47uF 20% 50V
C24      1-102-978-00 s CERAMIC 220PF 5% 50V

C25      1-130-495-00 s MYLAR 0.1uF 5% 50V
C26      1-126-968-11 s ELECT 100uF 20% 50V
C27      1-126-964-11 s ELECT 10uF 20% 50V
C28      1-126-965-11 s ELECT 22uF 20% 50V
C29      1-126-965-11 s ELECT 22uF 20% 50V

C30      1-117-438-11 s ELECT 27000uF 35V
C31      1-117-438-11 s ELECT 27000uF 35V
C32      1-137-031-11 s FILM 0.22uF 10% 100V
C33      1-137-031-11 s FILM 0.22uF 10% 100V
C34      1-137-031-11 s FILM 0.22uF 10% 100V

C35      1-137-031-11 s FILM 0.22uF 10% 100V
C36      1-126-964-11 s ELECT 10uF 20% 50V
C37-44   1-130-471-00 s MYLAR 0.001uF 5% 50V
C45      1-137-133-11 s FILM 0.15uF 5% 63V
C46      1-137-133-11 s FILM 0.15uF 5% 63V

C47      1-126-951-11 s ELECT 470uF 20% 35V
         (Up to Serial No. UC:31024, CE:51036)

         1-126-955-11 s ELECT 4700uF 20% 35V
         (Serial No. J:11001 and Higher,
                     UC:31025 and Higher,
                     CE:51037 and Higher)
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(PS-471 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| C48 | 1-126-951-11 | s | ELECT 470uF 20% 35V |
| C51 | 1-126-951-11 | s | ELECT 470uF 20% 35V |
| C52 | 1-126-962-11 | s | ELECT 3.3uF 20% 50V |
| C53 | 1-126-962-11 | s | ELECT 3.3uF 20% 50V |
| C54 | 1-126-967-11 | s | ELECT 47uF 20% 50V |
| C201 | 1-126-963-11 | s | ELECT 4.7uF 20% 50V |
| C202 | 1-126-964-11 | s | ELECT 10uF 20% 50V |
| C203 | 1-126-963-11 | s | ELECT 4.7uF 20% 50V |
| CN1 | 1-506-475-11 | o | CONNECTOR 10P, MALE |
| CN2 | 1-506-471-11 | o | CONNECTOR 6P, MALE |
| CN3 | 1-506-471-11 | o | CONNECTOR 6P, MALE |
| CN4 | 1-506-468-11 | o | CONNECTOR 3P, MALE |
| COP1 | 1-565-413-11 | o | PLUG, SHORTING |
| COR1 | 1-566-388-11 | s | CONNECTOR 8P, MALE |
| COR2 | 1-566-388-11 | s | CONNECTOR 8P, MALE |
| D1-7 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D8 | 8-719-110-63 | s | DIODE RD24ESB3 |
| D9 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D10 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D11 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D12 | 8-719-110-63 | s | DIODE RD24ESB3 |
| D13 | 8-719-911-55 | s | DIODE U05G |
| D14-20 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D21 | 8-719-511-40 | s | DIODE S1VB40 |
| D22 | 8-719-109-93 | s | DIODE RD6.2ES-B2 |
| D23 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D24 | 8-719-109-93 | s | DIODE RD6.2ES-B2 |
| D26 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D27 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D28 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D30 | 8-719-109-93 | s | DIODE RD6.2ES-B2 |
| D32 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D33 | 8-719-110-03 | s | DIODE RD7.5ES-B2 |
| D34 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D35 | 8-719-911-55 | s | DIODE U05G |
| D36 | 8-719-060-12 | s | DIODE MBG3338S |
| D37 | 8-719-109-85 | s | DIODE RD5.1ES-B2 |
| D38 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D40 | 8-719-911-55 | s | DIODE U05G |
| D41 | 8-719-911-55 | s | DIODE U05G |
| D42 | 8-719-911-55 | s | DIODE U05G |
| D43 | 8-719-911-55 | s | DIODE U05G |
| D44 | 8-719-511-40 | s | DIODE S1VB40 |
| D45-50 | 8-719-911-55 | s | DIODE U05G |
| D51 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D52 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D53 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D54 | 8-719-911-55 | s | DIODE U05G |
| D55 | 8-719-200-91 | s | DIODE 11EQS10 |
| D56 | 8-719-200-91 | s | DIODE 11EQS10 |
| D57 | 8-719-911-55 | s | DIODE U05G |
| D58 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D59 | 8-719-911-19 | s | DIODE 1SS119-25 |
| D60 | 8-719-200-91 | s | DIODE 11EQS10 |
| D61 | 8-719-048-89 | s | DIODE MPR3338S-TP-J167K |
| D62 | 8-719-109-93 | s | DIODE RD6.2ES-B2 |
| D63 | 8-719-200-77 | s | DIODE 10E2N |

(PS-471 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| D201 | 8-719-200-77 | s | DIODE 10E2N |
| F1 | ⚠ 1-576-230-11 | s | FUSE (H.B.C.) 3.15A 250V |
| F2 | ⚠ 1-576-232-11 | s | FUSE (H.B.C.) 5A 250V |
| FT1-63 | 1-694-216-11 | o | TAB, FASTEN (# 187) |
| IC1 | 8-759-103-93 | s | IC UPC393C |
| IC3 | 8-759-103-93 | s | IC UPC393C |
| IC4 | 8-759-103-93 | s | IC UPC393C |
| IC5 | 8-759-088-08 | s | IC UPC7812AHF |
| IC6 | 8-759-103-93 | s | IC UPC393C |
| IC7 | 8-759-700-69 | s | IC NJM79L12A |
| IC8 | 8-759-135-80 | s | IC UPC358C |
| IC9 | 8-759-135-80 | s | IC UPC358C |
| IC201 | 8-759-111-68 | s | IC UPC1237HA |
| Q1 | 8-729-927-57 | s | TRANSISTOR DTB143ES |
| Q2 | 8-729-927-57 | s | TRANSISTOR DTB143ES |
| Q3 | 8-729-927-57 | s | TRANSISTOR DTB143ES |
| Q4 | 8-729-029-56 | s | TRANSISTOR DTA144ESA |
| Q5 | 8-729-029-92 | s | TRANSISTOR DTC143ESA |
| Q6 | 8-729-205-02 | s | TRANSISTOR 2SA1150-Y |
| Q7 | 8-729-803-86 | s | TRANSISTOR 2SD1207-T |
| Q8 | 8-729-018-83 | s | TRANSISTOR 2SA1625-K |
| Q9 | 8-729-927-57 | s | TRANSISTOR DTB143ES |
| Q10 | 8-729-927-57 | s | TRANSISTOR DTB143ES |
| Q11 | 8-729-255-12 | s | TRANSISTOR 2SC2551-O |
| Q12 | 8-729-255-12 | s | TRANSISTOR 2SC2551-O |
| Q13 | 8-729-255-12 | s | TRANSISTOR 2SC2551-O |
| Q14 | 8-729-255-12 | s | TRANSISTOR 2SC2551-O |
| Q15 | 8-729-133-63 | s | TRANSISTOR 2SC2336B-P |
| Q16 | 8-729-927-57 | s | TRANSISTOR DTB143ES |
| Q17 | 8-729-803-86 | s | TRANSISTOR 2SD1207-T |
| Q18 | 8-729-029-56 | s | TRANSISTOR DTA144ESA |
| Q19 | 8-729-927-57 | s | TRANSISTOR DTB143ES |
| Q20 | 8-729-927-57 | s | TRANSISTOR DTB143ES |
| Q21 | 8-729-205-02 | s | TRANSISTOR 2SA1150-Y |
| Q22 | 8-729-119-78 | s | TRANSISTOR 2SC2785-HFE |
| Q23 | 8-729-119-78 | s | TRANSISTOR 2SC2785-HFE |
| Q24 | 8-729-205-02 | s | TRANSISTOR 2SA1150-Y |
| Q25 | 8-729-029-56 | s | TRANSISTOR DTA144ESA |
| Q26 | 8-729-102-14 | s | TRANSISTOR 2SD1021-F |
| Q27 | 8-729-102-14 | s | TRANSISTOR 2SD1021-F |
| Q28 | 8-729-127-53 | s | TRANSISTOR 2SC2275-P |
| Q29 | 8-729-029-92 | s | TRANSISTOR DTC143ESA |
| Q30 | 8-729-102-14 | s | TRANSISTOR 2SD1021-F |
| Q31 | 8-729-119-76 | s | TRANSISTOR 2SA1115P |
| Q32 | 8-729-119-76 | s | TRANSISTOR 2SA1115P |
| Q33 | 8-729-205-02 | s | TRANSISTOR 2SA1150-Y |
| Q34 | 8-729-102-14 | s | TRANSISTOR 2SD1021-F |
| Q35 | 8-729-205-02 | s | TRANSISTOR 2SA1150-Y |
| Q36 | 8-729-119-76 | s | TRANSISTOR 2SA1115P |
| Q37 | 8-729-141-10 | s | TRANSISTOR 2SA985-QP |
| Q38 | 8-729-030-03 | s | TRANSISTOR DTC144ESA |
| Q39 | 8-729-029-67 | s | TRANSISTOR DTC114ESA-TP |
| Q201 | 8-729-926-96 | s | TRANSISTOR 2SA1585SR |
| R1 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R2 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R3 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R4 | 1-249-420-11 | s | CARBON 1.8K 5% 1/4W |

(PS-471 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R5 | 1-215-436-00 | s | METAL 4.3K 1% 1/6W |
| R6 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R7 | 1-215-440-00 | s | METAL 6.2K 1% 1/6W |
| R8 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R9 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R10 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R11 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R12 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R13 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R15 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R21 | 1-217-156-00 | s | METAL 0.22 10% 5W |
| R24 | 1-215-454-00 | s | METAL 24K 1% 1/6W |
| R25 | 1-215-454-00 | s | METAL 24K 1% 1/6W |
| R26 | 1-249-406-11 | s | CARBON 120 5% 1/4W |
| R27 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R28 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R29 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R30 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R31 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R32 | 1-249-432-11 | s | CARBON 18K 5% 1/4W |
| R33 | 1-215-440-00 | s | METAL 6.2K 1% 1/6W |
| R34 | 1-215-440-00 | s | METAL 6.2K 1% 1/6W |
| R35 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R36 | 1-249-434-11 | s | CARBON 27K 5% 1/4W |
| R37 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R38 | 1-260-070-11 | s | CARBON 3.3 5% 1/2W |
| R39 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R40 | 1-215-458-00 | s | METAL 36K 1% 1/6W |
| R41 | 1-249-411-11 | s | CARBON 330 5% 1/4W |
| R42 | 1-249-430-11 | s | CARBON 12K 5% 1/4W |
| R43 | 1-215-440-00 | s | METAL 6.2K 1% 1/6W |
| R44 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R45 | 1-215-440-00 | s | METAL 6.2K 1% 1/6W |
| R46 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R47 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R48 | 1-249-421-11 | s | CARBON 2.2K 5% 1/4W |
| R49 | 1-249-421-11 | s | CARBON 2.2K 5% 1/4W |
| R50 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R51 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R52 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R53 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R54 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R55 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R56 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R57 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R58 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R59 | 1-260-087-11 | s | CARBON 100 5% 1/2W |
| R60 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R61 | 1-249-430-11 | s | CARBON 12K 5% 1/4W |
| R62 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R63 | 1-249-430-11 | s | CARBON 12K 5% 1/4W |
| R64 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R65 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R66 | 1-219-394-11 | s | RES 0.01 10% 5W |
| R68 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R69 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R70 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R71 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R72 | 1-215-440-00 | s | METAL 6.2K 1% 1/6W |

(PS-471 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R73 | 1-215-440-00 | s | METAL 6.2K 1% 1/6W |
| R74 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R75 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R76 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R77 | 1-219-394-11 | s | RES 0.01 10% 5W |
| R79 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R80 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R81 | 1-260-087-11 | s | CARBON 100 5% 1/2W |
| R82 | 1-249-430-11 | s | CARBON 12K 5% 1/4W |
| R83 | 1-249-430-11 | s | CARBON 12K 5% 1/4W |
| R84 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R85 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R86 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R87 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R88 | 1-249-437-11 | s | CARBON 47K 5% 1/4W |
| R89 | 1-249-425-11 | s | CARBON 4.7K 5% 1/4W |
| R90 | 1-249-435-11 | s | CARBON 33K 5% 1/4W |
| R91 | 1-247-887-00 | s | CARBON 220K 5% 1/4W |
| R92 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R93 | 1-260-104-11 | s | CARBON 2.7K 5% 1/2W |
| R94 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R96 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R97 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R98 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R99 | 1-249-441-11 | s | CARBON 100K 5% 1/4W |
| R100 | 1-249-441-11 | s | CARBON 100K 5% 1/4W |
| R101 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R102 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R103 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R104 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R105 | 1-215-438-00 | s | METAL 5.1K 1% 1/6W |
| R106 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R107 | 1-215-456-00 | s | METAL 30K 1% 1/6W |
| R109 | 1-215-438-00 | s | METAL 5.1K 1% 1/6W |
| R110 | 1-215-410-00 | s | METAL 360 1% 1/6W |
| R111 | 1-215-456-00 | s | METAL 30K 1% 1/6W |
| R112 | 1-247-815-91 | s | CARBON 220 5% 1/4W |
| R114 | 1-247-815-91 | s | CARBON 220 5% 1/4W |
| R115 | 1-215-398-00 | s | METAL 110 1% 1/6W |
| R116 | 1-215-454-00 | s | METAL 24K 1% 1/6W |
| R117 | 1-249-416-11 | s | CARBON 820 5% 1/4W |
| R122 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R123 | 1-249-417-11 | s | CARBON 1K 5% 1/4W |
| R124-131 | 1-247-903-00 | s | CARBON 1M 5% 1/4W |
| R132 | 1-249-429-11 | s | CARBON 10K 5% 1/4W |
| R201 | 1-247-807-31 | s | CARBON 100 5% 1/4W |
| R202 | 1-247-887-00 | s | CARBON 220K 5% 1/4W |
| R203 | 1-247-807-31 | s | CARBON 100 5% 1/4W |
| R204 | 1-249-431-11 | s | CARBON 15K 5% 1/4W |
| R205 | 1-247-807-31 | s | CARBON 100 5% 1/4W |
| RV2 | 1-241-764-11 | s | RES, ADJ METAL 10k |
| RV3 | 1-241-762-11 | s | RES, ADJ METAL 2.2k |
| RV4 | 1-241-764-11 | s | RES, ADJ METAL 10k |
| RV5 | 1-241-764-11 | s | RES, ADJ METAL 10k |
| RV6 | 1-241-764-11 | s | RES, ADJ METAL 10k |
| RV7 | 1-241-764-11 | s | RES, ADJ METAL 10k |
| RY3 | 1-515-762-11 | s | RELAY |

---
PS-472A BOARD
---

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8311-866-A | o | MOUNTED CIRCUIT BOARD, PS-472A |
| (This assembly includes the following parts.) | | | |
| D1 | 8-719-901-18 | s | DIODE ESAD83-004 |
| Q1 | 8-729-010-97 | s | TRANSISTOR 2SC3856M-OPY |
| Q2 | 8-729-010-97 | s | TRANSISTOR 2SC3856M-OPY |
| R1 | 1-260-076-11 | s | CARBON 10 5% 1/2W |
| R2 | 1-260-076-11 | s | CARBON 10 5% 1/2W |
| R3 | 1-219-393-11 | s | RES 0.05 10% 5W |
| R4 | 1-219-393-11 | s | RES 0.05 10% 5W |

---
PS-472B BOARD
---

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8311-867-A | o | MOUNTED CIRCUIT BOARD, PS-472B |
| (This assembly includes the following parts.) | | | |
| D1 | 8-719-901-18 | s | DIODE ESAD83-004 |
| Q1 | 8-729-010-98 | s | TRANSISTOR 2SA1492M-OPY |
| Q2 | 8-729-010-98 | s | TRANSISTOR 2SA1492M-OPY |
| R1 | 1-260-076-11 | s | CARBON 10 5% 1/2W |
| R2 | 1-260-076-11 | s | CARBON 10 5% 1/2W |
| R3 | 1-219-393-11 | s | RES 0.05 10% 5W |
| R4 | 1-219-393-11 | s | RES 0.05 10% 5W |

---
PS-473 BOARD (Up to Serial No. UC:31024, CE:51036)
---

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8311-865-A | o | MOUNTED CIRCUIT BOARD, PS-473 |
| (This assembly includes the following parts.) | | | |
| C1 | 1-130-495-00 | s | MYLAR 0.1uF 5% 50V |
| C2 | 1-130-495-00 | s | MYLAR 0.1uF 5% 50V |
| D1 | 8-719-901-18 | s | DIODE ESAD83-004 |
| IC1 | 8-749-930-52 | s | IC SI3052V |

---
PS-473 BOARD (Serial No. J:11001 and Higher,
---  UC:31025 and Higher,
CE:51037 and Higher)

| | | | |
|---|---|---|---|
| 1pc | A-8311-865-B | o | MOUNTED CIRCUIT BOARD, PS-473 |
| (This assembly includes the following parts.) | | | |
| C1 | 1-126-967-11 | s | ELECT 47uF 20% 50V |
| D1 | 8-719-901-18 | s | DIODE ESAD83-004 |
| D2 | 8-719-109-93 | s | DIODE RD6.2ESB2 |
| D3 | 8-719-200-77 | s | DIODE 10E2N |
| D4 | 8-719-200-77 | s | DIODE 10E2N |
| Q1 | 8-729-010-97 | s | TRANSISTOR 2SC3856-Y |
| Q2 | 8-729-102-14 | s | TRANSISTOR 2SD1020TP-F |
| Q3 | 8-729-205-02 | s | TRANSISTOR 2SB810-F |
| R1 | 1-249-421-11 | s | CARBON 2.2K 5% 1/4W |
| R2 | 1-217-158-00 | s | RES, METAL PLATE 0.47 10% 5W |

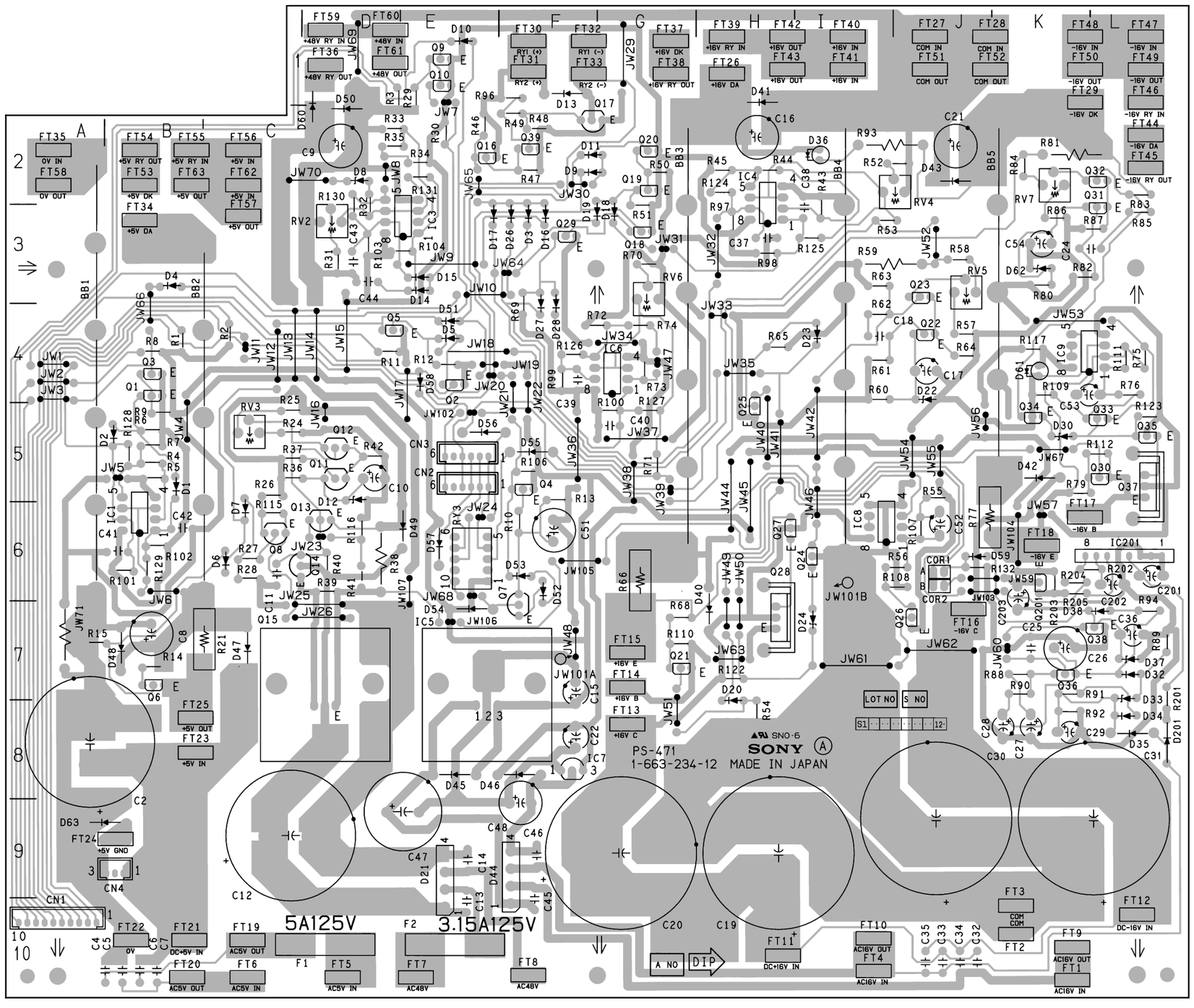
```
-----
FRAME
-----
Ref. No.
or Q'ty  Part No.    SP Description

1pc    ⚠ 1-429-846-12 s TRANSFORMER, POWER (For J,UC)
1pc    ⚠ 1-429-847-12 s TRANSFORMER, POWER (For CE)
2pcs     1-515-825-11 s RELAY, POWER
1pc    ⚠ 1-576-048-11 s FUSE 10A 125V (For J,UC)
1pc    ⚠ 1-576-232-11 s FUSE (H.B.C) 5A 250V (For CE)

2pcs     8-719-500-07 s DIODE S25VB60

[HARNESS (D1)]
1pc      1-956-798-11 o HARNESS (D1)
         This cable includes the following connectors.
         FT9/10/11/12 (to PS-471 board)
         - (to DIODE S25VB60)

[HARNESS (D2)]
1pc      1-956-797-11 o HARNESS (D2)
         This cable includes the following connectors.
         FT19/20/21/22 (to PS-471 board)
         - (to DIODE S25VB60)

[HARNESS (DC1)]
2pcs     1-956-799-11 o HARNESS (DC1)
         This cable includes the following connectors.
         FT27/28/35/40/41/42/43/47/48/49/50/51/
           52/56/57/58/60/61/62/63 (to PS-471 board)
         - (to DC1, DC2)

[HARNESS (LED)]
1pc      1-956-796-11 o HARNESS (LED)
         This cable includes the following connectors.
         CN1 (to LED-297 board)
         CN1 (to PS-471 board)


[HARNESS (POWER SWITCH)] (For J,UC)
1pc    ⚠ 1-956-806-11 o HARNESS (POWER SWITCH)
         This cable includes the following connectors.
         CN1 (to PS-461 board)
         - (to POWER SWITCH)
         - (to AC INLET)

[HARNESS (POWER SWITCH)] (For CE)
1pc    ⚠ 1-956-805-11 o HARNESS (POWER SWITCH)
         This cable includes the following connectors.
         CN1 (to PS-461 board)
         - (to POWER SWITCH)
         - (to AC INLET)

[HARNESS (PS-472A)]
1pc      1-956-793-11 o HARNESS (PS-472A)
         This cable includes the following connectors.
         FT13/14/15/26/37 (to PS-471 board)
         - (to PS-472A board)

[HARNESS (PS-472B)]
1pc      1-956-794-11 o HARNESS (PS-472B)
         This cable includes the following connectors.
         FT16/17/18/29/44 (to PS-471 board)
         - (to PS-472B board)

[HARNESS (PS-473)]
1pc      1-956-795-11 o HARNESS (PS-473)
         This cable includes the following connectors.
         FT23/24/25/34/53 (to PS-471 board)
         - (to PS-473 board)

[HARNESS (RELAY)]
1pc      1-956-800-11 o HARNESS (RELAY)
         This cable includes the following connectors.
         FT30/31/32/33 (to PS-471 board)
         - (to RELAY)
```

```
(FRAME)

Ref. No.
or Q'ty  Part No.    SP Description


[HARNESS (RY-16VNEG)]
1pc      1-956-802-11 o HARNESS (RY-16VNEG)
         This cable includes the following connectors.
         FT45/46 (to PS-471 board)
         - (to RELAY)

[HARNESS (RY-16VPOS)]
1pc      1-956-803-11 o HARNESS (RY-16VPOS)
         This cable includes the following connectors.
         FT38/39 (to PS-471 board)
         - (to RELAY)

[HARNESS (RY-48V/5V)]
1pc      1-956-801-11 o HARNESS (RY-48V/5V)
         This cable includes the following connectors.
         FT36/54/55/59 (to PS-471 board)
         - (to RELAY)

[HARNESS (SELECTOR)] (For J,UC)
1pc      1-956-807-11 o HARNESS (SELECTOR)
         This cable includes the following connectors.
         CN2/5 (to PS-461 board)

[HARNESS (VOLTAGE SELECTOR)] (For CE)
1pc    ⚠ 1-956-804-11 o HARNESS (VOLTAGE SELECTOR)
         This cable includes the following connectors.
         CN2 (to PS-461 board)
         - (to VOLTAGE SELECTOR)
```

## 4-4. Accessories Supplied

```
Ref. No.
or Q'ty  Part No.    SP Description

1pc    ⚠ 1-534-827-14 s CORD, POWER 3P (For UC)
1pc    ⚠ 1-590-910-11 s CORD SET, POWER (For CE)
1pc    ⚠ 1-575-181-11 s CORD SET, POWER (For J)
1pc    ⚠ 1-750-686-11 s CONVERSION CONNECTOR,3P-2P(For J)
```

# Section 5
# Board Layouts



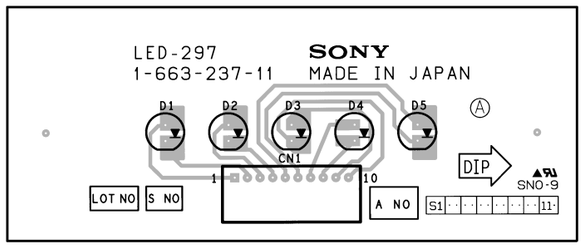

PS-471(1-663-234-11,12)

| | | | |
|---|---|---|---|
| CN1 | A10 | Q2 | E4 |
| CN2 | E5 | Q3 | B4 |
| CN3 | E5 | Q4 | F5 |
| CN4 | B9 | Q5 | D4 |
| | | Q6 | B7 |
| D1 | B5 | Q7 | F7 |
| D2 | B5 | Q8 | C6 |
| D3 | F3 | Q9 | E1 |
| D4 | B3 | Q10 | E1 |
| D5 | E4 | Q11 | D5 |
| D6 | C6 | Q12 | D5 |
| D7 | C6 | Q13 | D6 |
| D8 | D2 | Q14 | D6 |
| D9 | F2 | Q15 | C7 |
| D10 | E1 | Q16 | E2 |
| D11 | F2 | Q17 | G2 |
| D12 | D5 | Q18 | G3 |
| D13 | F1 | Q19 | G2 |
| D14 | E3 | Q20 | G2 |
| D15 | E3 | Q21 | G7 |
| D16 | F3 | Q22 | J4 |
| D17 | F3 | Q23 | J3 |
| D18 | G3 | Q24 | I6 |
| D19 | F3 | Q25 | H4 |
| D20 | H7 | Q26 | J7 |
| D21 | E9 | Q27 | H6 |
| D22 | J4 | Q28 | H6 |
| D23 | I4 | Q29 | F3 |
| D24 | I7 | Q30 | L5 |
| D26 | F3 | Q31 | L2 |
| D27 | F4 | Q32 | L2 |
| D28 | F4 | Q33 | L4 |
| D30 | K5 | Q34 | K4 |
| D32 | L7 | Q35 | L5 |
| D33 | L7 | Q36 | K7 |
| D34 | L8 | Q37 | L5 |
| D35 | L8 | Q38 | L7 |
| D36 | I2 | Q39 | F2 |
| D37 | L7 | Q201 | K6 |
| D38 | K7 | | |
| D40 | H7 | RV2 | D3 |
| D41 | H1 | RV3 | C5 |
| D42 | K5 | RV4 | J2 |
| D43 | J2 | RV5 | J4 |
| D44 | F9 | RV6 | G3 |
| D45 | E8 | RV7 | K2 |
| D46 | F8 | | |
| D47 | C7 | RY3 | E6 |
| D48 | B7 | | |
| D49 | E6 | | |
| D50 | D1 | | |
| D51 | E4 | | |
| D52 | F7 | | |
| D53 | F6 | | |
| D54 | F7 | | |
| D55 | F5 | | |
| D56 | E5 | | |
| D57 | E6 | | |
| D58 | E4 | | |
| D59 | J6 | | |
| D60 | D2 | | |
| D61 | K4 | | |
| D62 | K3 | | |
| D63 | A9 | | |
| D201 | L8 | | |
| | | | |
| F1 | D10 | | |
| F2 | E10 | | |
| | | | |
| IC1 | B6 | | |
| IC3 | E3 | | |
| IC4 | H2 | | |
| IC5 | E7 | | |
| IC6 | G4 | | |
| IC7 | F8 | | |
| IC8 | I6 | | |
| IC9 | K4 | | |
| IC201 | L6 | | |
| | | | |
| Q1 | B4 | | |

**AC-P700A (J) : S/N 11001 and Higher**
**AC-P700A (UC) : S/N 31001 and Higher**
**AC-P700A (CE) : S/N 51001 and Higher**

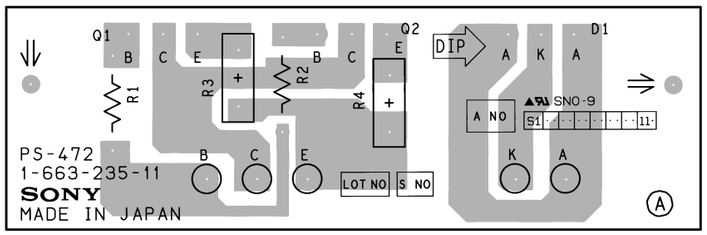
**PS-471** -A SIDE-
1-663-234-11, 12

http://getMANUAL.com
LED-297, PS-461, PS-472, PS-473



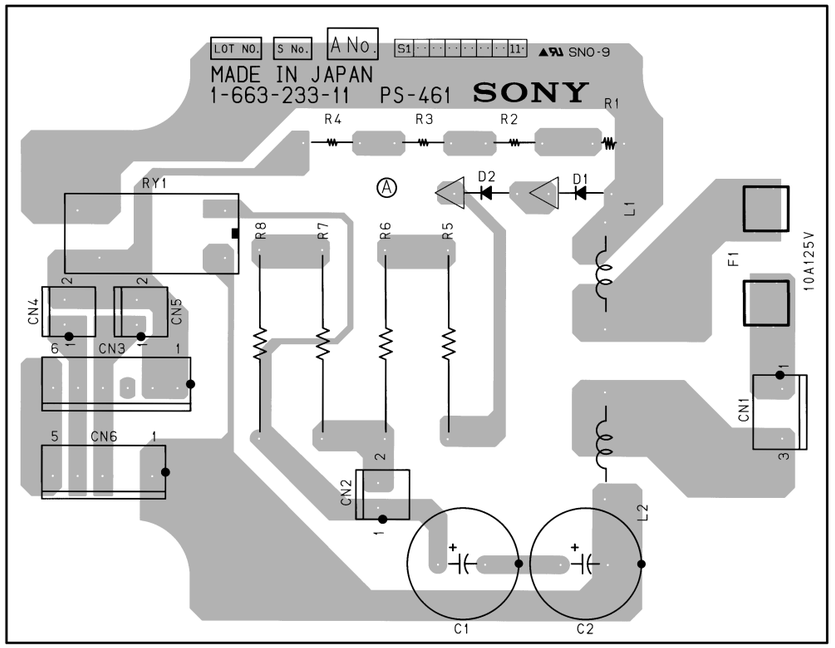

AC-P700A (J) : S/N 11001 and Higher
AC-P700A (UC) : S/N 31001 and Higher
AC-P700A (CE) : S/N 51001 and Higher

**LED-297** -A SIDE-
1-663-237-11



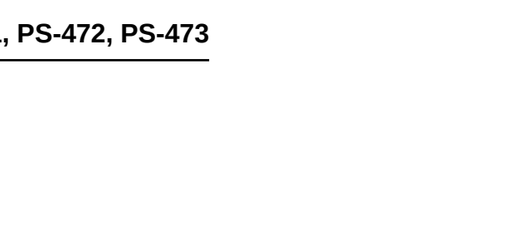

AC-P700A (J) : S/N 11001 and Higher
AC-P700A (UC) : S/N 31001 and Higher
AC-P700A (CE) : S/N 51001 and Higher

**PS-472** -A SIDE-
1-663-235-11



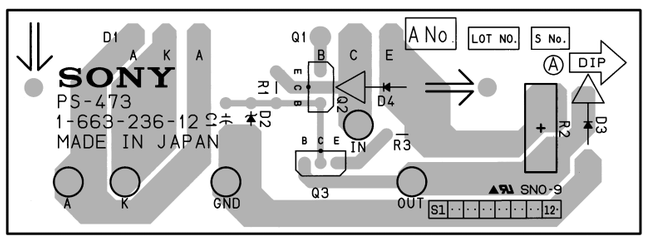

AC-P700A (J) : S/N 11001 and Higher
AC-P700A (UC) : S/N 31001 and Higher
AC-P700A (CE) : S/N 51001 and Higher

**PS-461** -A SIDE-
1-663-233-11




AC-P700A (UC) : S/N 31001 through 31024
AC-P700A (CE) : S/N 51001 through 51036

**PS-473** -A SIDE-
1-663-236-11

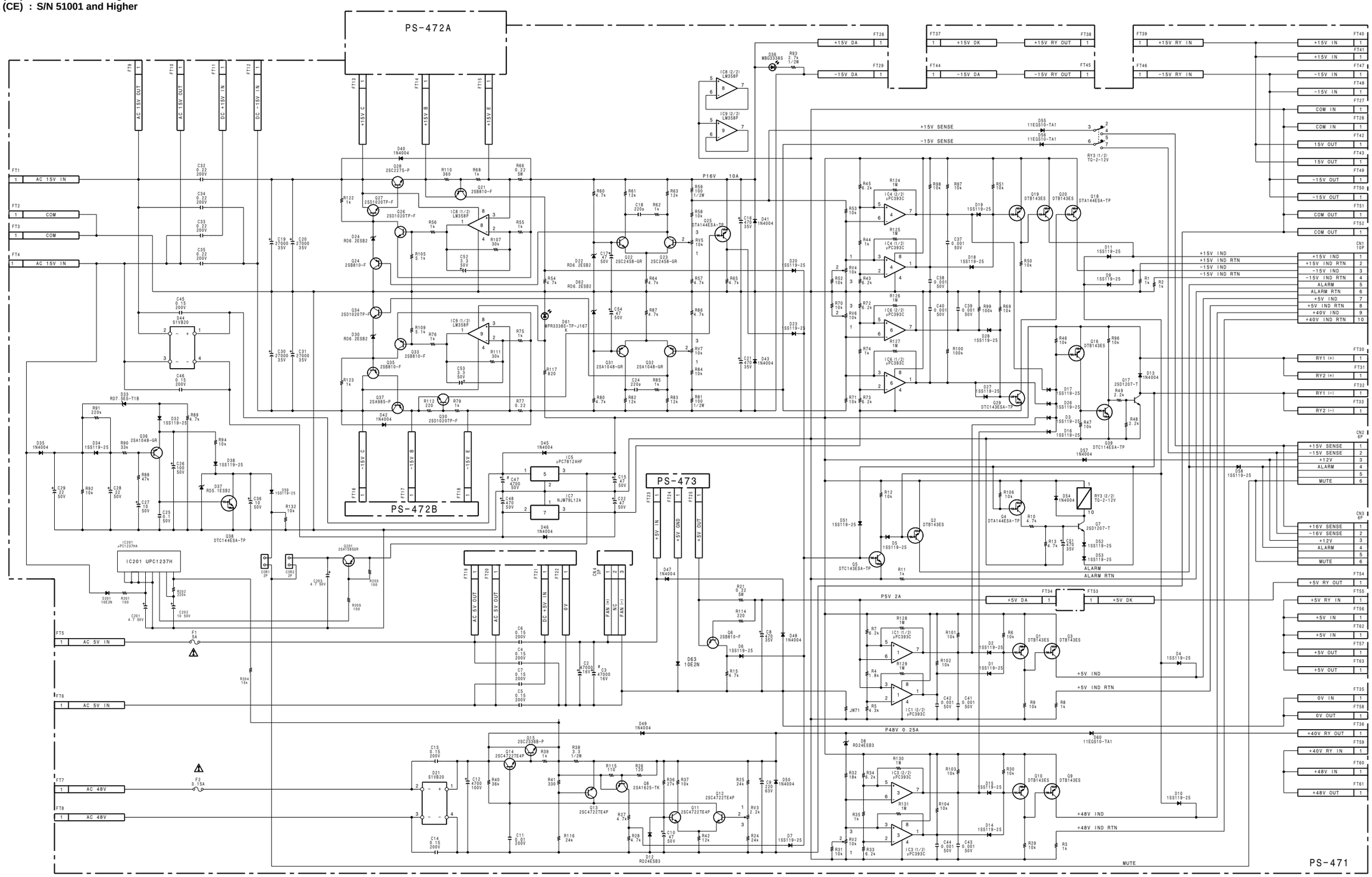



AC-P700A (J) : S/N 11001 and Higher
AC-P700A (UC) : S/N 31025 and Higher
AC-P700A (CE) : S/N 51037 and Higher

**PS-473** -A SIDE-
1-663-236-12

# Section 6
# Schematic Diagrams

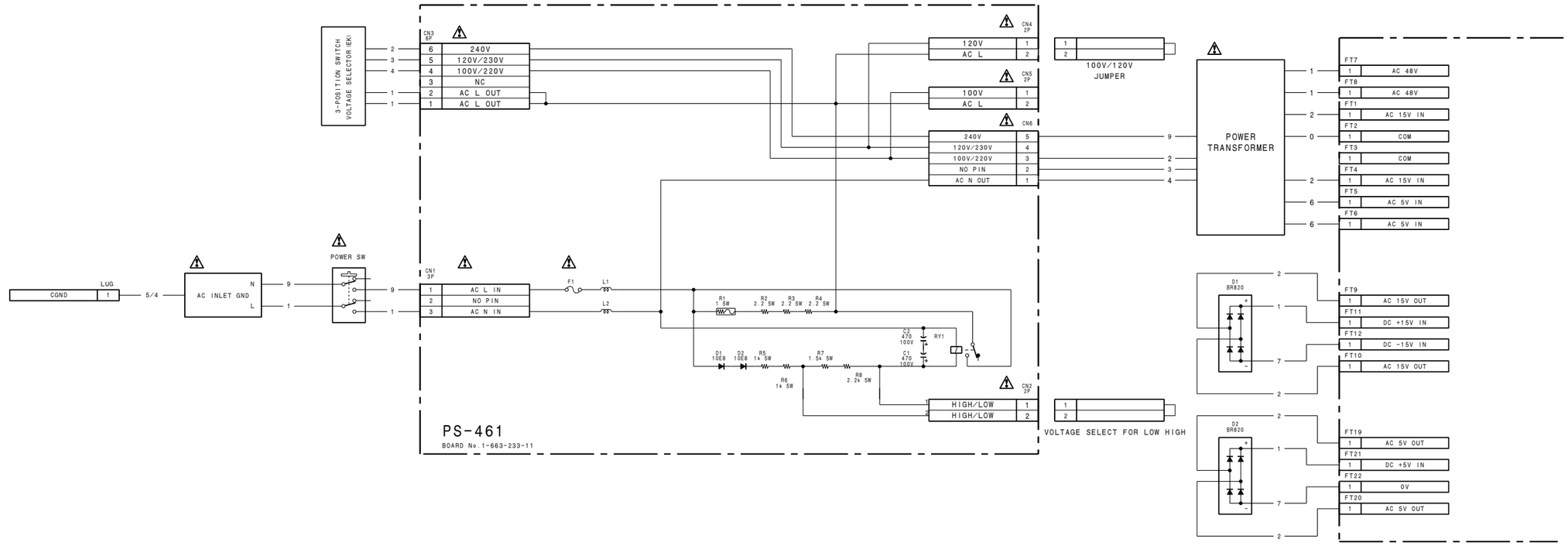
**AC-P700A (J) : S/N 11001 and Higher**
**AC-P700A (UC) : S/N 31001 and Higher**
**AC-P700A (CE) : S/N 51001 and Higher**

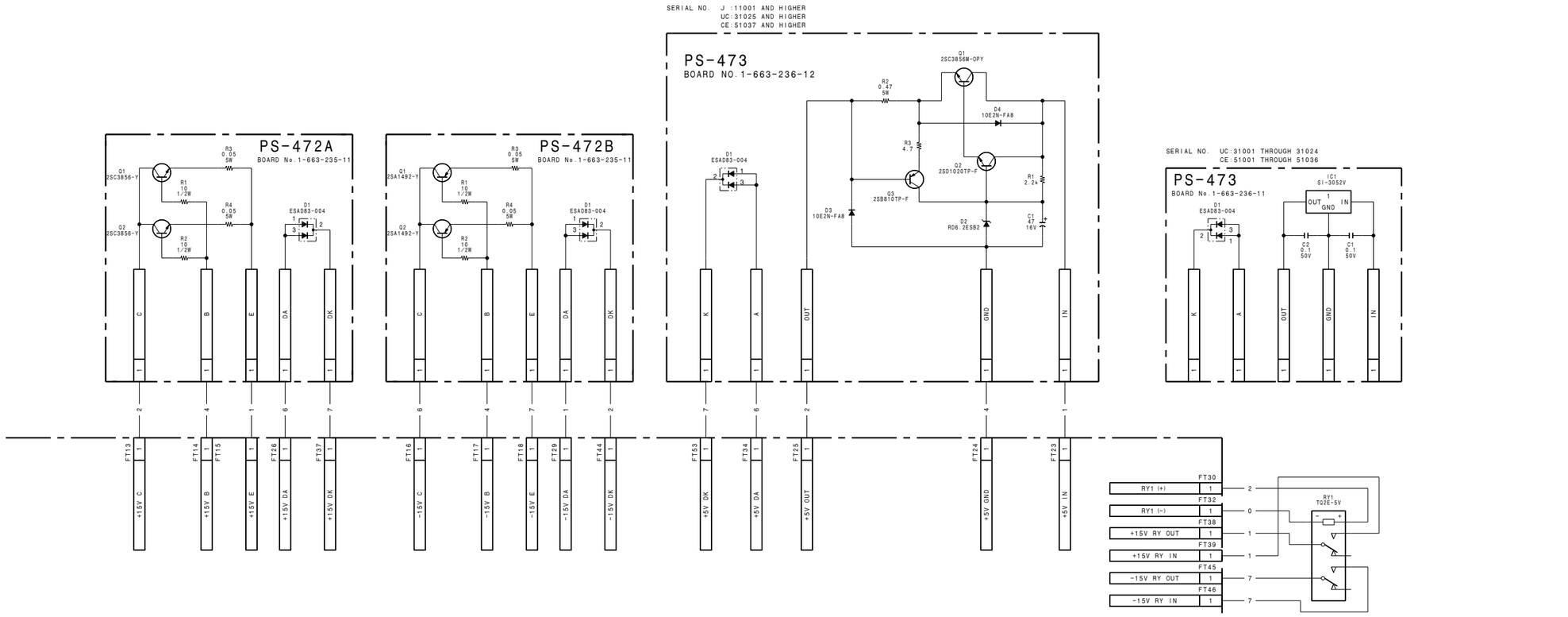



| #:CHANGED INFORMATION | | |
|---|---|---|
| APPLIED SERIAL NO. | PARTS THAT HAVE BEEN CHANGED. | PART THAT HAVE BEEN DELETED. |
| J:11001 AND HIGHER<br>UC:31025 AND HIGHER<br>CE:51037 AND HIGHER | C47 470 → 4700 | C3 |

**PS-471**
BOARD NO. 1-663-234-11,12
B-VACP700A-PS471-S/M

**AC-P700A (J) : S/N 11001 and Higher**
**AC-P700A (UC) : S/N 31001 and Higher**
**AC-P700A (CE) : S/N 51001 and Higher**








**FRAME WIRING**
**LED-297**
**PS-461**
**PS-472A/B**
**PS-473**
B-¥ACP700A-FRAME-S/M

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer :

Check the metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

**LEAKAGE TEST**

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 5.25 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20 V AC range are suitable. (See Fig. A)

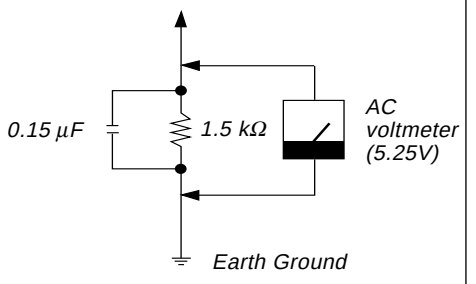



*Fig A. Using an AC voltmeter to check AC leakage.*

**Attention-when the product is installed in Rack:**

1. **Prevention against overloading of branch circuit**
   When this product is installed in a rack and is supplied power from an outlet on the rack, please make sure that the rack does not overload the supply circuit.

2. **Providing protective earth**
   When this product is installed in a rack and is supplied power from an outlet on the rack, please confirm that the outlet is provided with a suitable protective earth connection.

3. **Internal air ambient temperature of the rack**
   When this product is installed in a rack, please make sure that the internal air ambient temperature of the rack is within the specified limit of this product.

4. **Prevention against achieving hazardous condition due to uneven mechanical loading**
   When this product is installed in a rack, please make sure that the rack does not achieve hazardous condition due to uneven mechanical loading.

AC-P700A (J, UC, CE) J, E
3-192-058-02

Sony Corporation
Image & Sound Communication Company

Printed in Japan
1997. 11 08
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Published by
Engineering Services Dept.